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EXAMINER

UHLENHAKE, JASON S

ART UNIT

PAPER NUMBER

2853

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Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### ***Double Patenting***

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 43-50, 52-58, 60-62 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-5, 8, 10, 13-15, 17, 21 of prior U.S. Patent No. 6,789,870. This is a double patenting rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 56 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 56 recites the limitation "the test line" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 43-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marler et al (U.S. Pat. 5,975,677) in view of Howkins (U.S. Pat. 4,523,200) and Li et al (U.S. Pat. 6,431,679).

***Marler et al discloses:***

- ***regarding claim 43***, printing a pattern having a first portion and a second portion, wherein the first portion is printed by the first fluid source (Column 12, Lines 29-31) and the second portion is printed by the second fluid source (Column 12, Lines 32-34); obtaining a drop volume relationship between the first drop quantity and the second drop quantity from the pattern (Column 14, Lines 6-11)
- ***regarding claim 44***, determining whether a ratio between the first drop quantity and the second drop quantity deviates from a specified ratio (Abstract; Column 5, Lines 38-44)
- ***regarding claim 48***, creating a fit line along at least a part of the signal response of the test portion (Column 7, Lines 16-31)
- ***regarding claims 49, 57***, the first portion has a fixed fill density and the second has a varying fill density (Column 11, Lines 11-32)

- **regarding claim 50**, determining a fill density of the second portion corresponding to a fill density of the first portion (Column 2, Lines 25-30); calculating the second drop quantity from the fill density of the second portion (Column 12, Lines 56-62)
- **regarding claims 51, 59**, at least one selected from the group consisting of a spit bar and a light absorbing portion (Column 6, Lines 11-12)
- **regarding claim 52**, printing a test pattern having a reference portion and a test portion, wherein the reference portion is printed by the first fluid source (Column 12, Lines 29-31) and the test portion is printed by the second fluid source (Column 12, Lines 32-34); obtaining a drop volume relationship between the first drop quantity and the second drop quantity from the pattern (Column 14, Lines 6-11)
- **regarding claim 53**, scanning the test pattern to obtain data, wherein the obtaining step obtains the drop volume relationship between the first drop volume and the second drop volume from the test pattern based on the data (Column 12, Lines 56-62)
- **regarding claim 54**, data includes reference portion data and test portion data, wherein the obtaining step obtains the drop volume relationship by comparing the reference portion data with the test portion data (Column 14, Lines 6-11)
- **regarding claim 56**, wherein the test line is fit to at least a part of the test portion data (Column 9, Lines 13-23)
- **regarding claim 58**, determining a fill density of the test portion substantially equal to a fill density of the reference portion (Column 2, Lines 25-30); and

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calculating the second drop volume from the fill density of the test portion (Column 12, Lines 56-62)

- **regarding claim 60**, means for scanning a test pattern having a reference portion and a test portion and generating a sensor output, wherein the reference portion is printed by the first fluid source and the test portion is printed by the second fluid source (Column 12, Lines 56-62)

- means for obtaining a relationship between the first drop volume and the second drop volume from the test pattern (Column 14, Lines 6-11)

- means for changing a color map using the relationship (Column 9, Lines 13-24)

- **regarding claim 61**, scanning means includes means for illuminating the test pattern (Column 8, Lines 32-44)

- **regarding claim 62**, means for determining a fill density of the test portion corresponding to a fill density of the reference portion (Column 7, Lines 36-43); means for calculating a drop volume from the fill density of the test portion (Column 12, Lines 56-62)

***Marler et al does not disclose expressly the following:***

- **regarding claim 43**, adjusting data used to determine quantities of fluid to eject from the first fluid source or the second fluid source based on the relationship between the first drop quantity and the second drop quantity

- **regarding claim 45**, scanning the pattern to obtain a signal response, wherein the obtaining step obtains the drop volume relationship between the first drop quantity and the second drop quantity based on the signal response
- **regarding claim 46**, the signal response includes a first portion response and a second portion response, and wherein the obtaining step obtains the drop volume relationship by comparing the first portion response with the second portion response
- **regarding claim 47**, determining an intersection point between a calculated value of the first portion response and the second portion response; and determining the fill density of the first portion at the intersection point
- **regarding claim 48**, adjusting the intersection point to an intersection between the fit line and the calculated value of the reference portion response
- **regarding claim 52**, adjusting at least one value in a color map using the drop volume relationship between the first drop volume and the second drop volume
- **regarding claim 55**, determining an intersection point between a reference line determined from the reference portion and the test portion data; and determining the fill density of the test portion at the intersection point
- **regarding claim 56**, determining the intersection point includes determining an interaction between the fit line and the reference line

**Howkins discloses:**

- **regarding claim 43**, adjusting data used to determine quantities of fluid to eject from the first fluid source or the second fluid source based on the relationship between the first drop quantity and the second drop quantity (Column 10, Lines 55-60),

for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

- **regarding claim 47**, determining an intersection point between a calculated value of the first portion response and the second portion response; and determining the fill density of the first portion at the intersection point (Figure 21; Column 8, Line 50 – Column 9, Line15), for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

- **regarding claim 48**, adjusting the intersection point to an intersection between the fit line and the calculated value of the reference portion response (Figure 21; Column 8, Line 50 – Column 9, Line15), for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

- **regarding claim 52**, adjusting at least one value in a color map using the drop volume relationship between the first drop volume and the second drop volume (Figures 17-20), for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

- **regarding claim 55**, determining an intersection point between a reference line determined from the reference portion and the test portion data (Figures 14-16); and determining the fill density of the test portion at the intersection point (Column 7, Lines 16-32), for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

- **regarding claim 56**, determining the intersection point includes determining an interaction between the fit line and the reference line (Column 7 Lines



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53-68; Column 8, Lines 1-9), for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets, for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets

***Li et al discloses:***

- ***regarding claim 45***, scanning the pattern to obtain a signal response, wherein the obtaining step obtains the drop volume relationship between the first drop quantity and the second drop quantity based on the signal response (Column 3, Lines 49-56; Column 5, Lines 53-61), for the purpose of calibrating print contrast in a printing system

- ***regarding claim 46***, the signal response includes a first portion response and a second portion response, and wherein the obtaining step obtains the drop volume relationship by comparing the first portion response with the second portion response (Column 3, Lines 49-56; Column 5, Lines 53-61), for the purpose of calibrating print contrast in a printing system

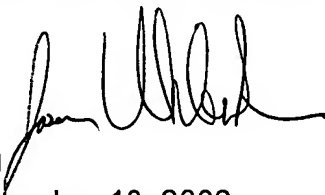
At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Howkins and Li et al into the device of Marler et al, for the purpose of substantially eliminating instabilities associated with the ejection of ink droplets and calibrating print contrast in a printing system.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
JSU  
September 13, 2006

  
**STEPHEN MEIER**  
**SUPERVISORY PATENT EXAMINER**